



CITY OF LODI COUNCIL COMMUNICATION

AGENDA TITLE: Approve "Will Serve" Letter for Potential NCPA Power Plant Project at White Slough Water Pollution Control Facility

MEETING DATE: November 16, 2005

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council approve preparation of a "Will Serve" letter for a potential NCPA power plant project at the White Slough Water Pollution Control Facility.

BACKGROUND INFORMATION: The Northern California Power Agency (NCPA) currently operates a small (49 MW) power plant located at the City's White Slough Water Pollution Control Facility (WSWPCF). This plant uses treated water from the City's facility for cooling and further treats a portion of the water for steam injection into the power turbine.

The City's site is being evaluated by NCPA for construction of a second, much larger power plant – on the order of 250 MW. While this plant would not use steam injection, it would require substantially more water for cooling, not just because of its size, but its expected operating efficiency would be high enough that the plant would run many more hours throughout the year.

NCPA is conducting a preliminary feasibility analysis for the facility – a decision on lease and other aspects of the project are premature, however, in order to further consider this site, NCPA needs to know if land is available, if the City will make its treated wastewater available to the plant and if we can accept any discharge from the power plant. These three issues are described separately below.

Land – The power plant would occupy up to approximately five acres out of the City's total of 1,040 acres and would be located on used lands adjacent to the current plant. Staff does not see this as a significant issue.

Water Availability – The proposed plant would use approximately 2.3 million gallons per day (MGD) at the highest days and 1.4 MGD on a typical warm day. Overall annual averages would be lower. The WSWPCF currently processes approximately 6.4 MGD of domestic waste which is discharged to the Delta during fall, winter and spring months. During the summer, this flow, plus roughly 2.1 MGD of industrial waste is used to irrigate the 890 acres of farmland at WSWPCF. While from these figures it appears there is plenty of water available, staff's preliminary observations are that there would be shortages of irrigation water during the course of the summer if the power plant operated as much as indicated. However, staff also believes these shortfalls could be relatively easy to manage and possibly made up with utilizing some return flow from the plant, pumping shallow groundwater or utilizing our water rights to pumping Delta water. Regardless of the irrigation issue, the reduction in discharge volumes for the rest of the year would be beneficial to Lodi.

APPROVED: _____

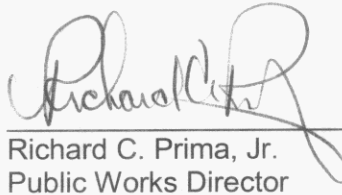
Blair King, City Manager

Discharge – The proposed power plant could return approximately 0.5 MGD on the average of "used" cooling water. This water would be higher in Total Dissolved Solids (TDS), roughly three times as high as the treated wastewater (444 milligrams per liter - mg/L). This could be an issue for irrigation, but would certainly be an issue for discharge to the Delta as the current discharge is just below the Delta water quality TDS standard of 450 mg/L. Commingling the higher TDS return flow with the City's discharge would raise the TDS to over 500 mg/L. NCPA has indicated they can proceed with the power plant on a "no return" basis, utilizing heat and evaporation ponds to reduce the return water to solids, thus City staff does not recommend that we accept return cooling water. Domestic waste from the support facilities would be acceptable.

Staff recommends that the City issue a cooling water "Will Serve" letter to NCPA for the proposed project subject to lease terms to be negotiated on a "no return" basis.

FISCAL IMPACT: The property lease and provision of water would be on a market-rate basis and would cover City costs and financial impacts.

FUNDING AVAILABLE: Not applicable.



Richard C. Prima, Jr.
Public Works Director

RCP/pmf

cc: David Dockham, Interim Electric Utility Director
Del Kerlin, Wastewater Treatment Superintendent
Wally Sandelin, City Engineer

NCPA - New Lodi Project

NCPA Members



NCPA Generation Plants Keep Rates Low!

- ☐ Northern California Power Agency
- ☐ Established in 1968
- ☐ Joint Action Agency
- ☐ Not for profit
- ☐ Membership -
 - ✓ Municipalities
 - ✓ Rural Electric Cooperatives
 - ✓ Irrigation Districts
 - ✓ Other Publicly Owned Entities
- ☐ Our Mission - Purchase, Aggregation, Scheduling and Management of Electrical Energy for our Members.

Filed 11-16-05

NCPA - Together We Can do More!

■ *The Enron Debacle*

- *Market Price Volatility*
- *Uncertainty*
- *Led to High Rates*

■ *Need for Stability*

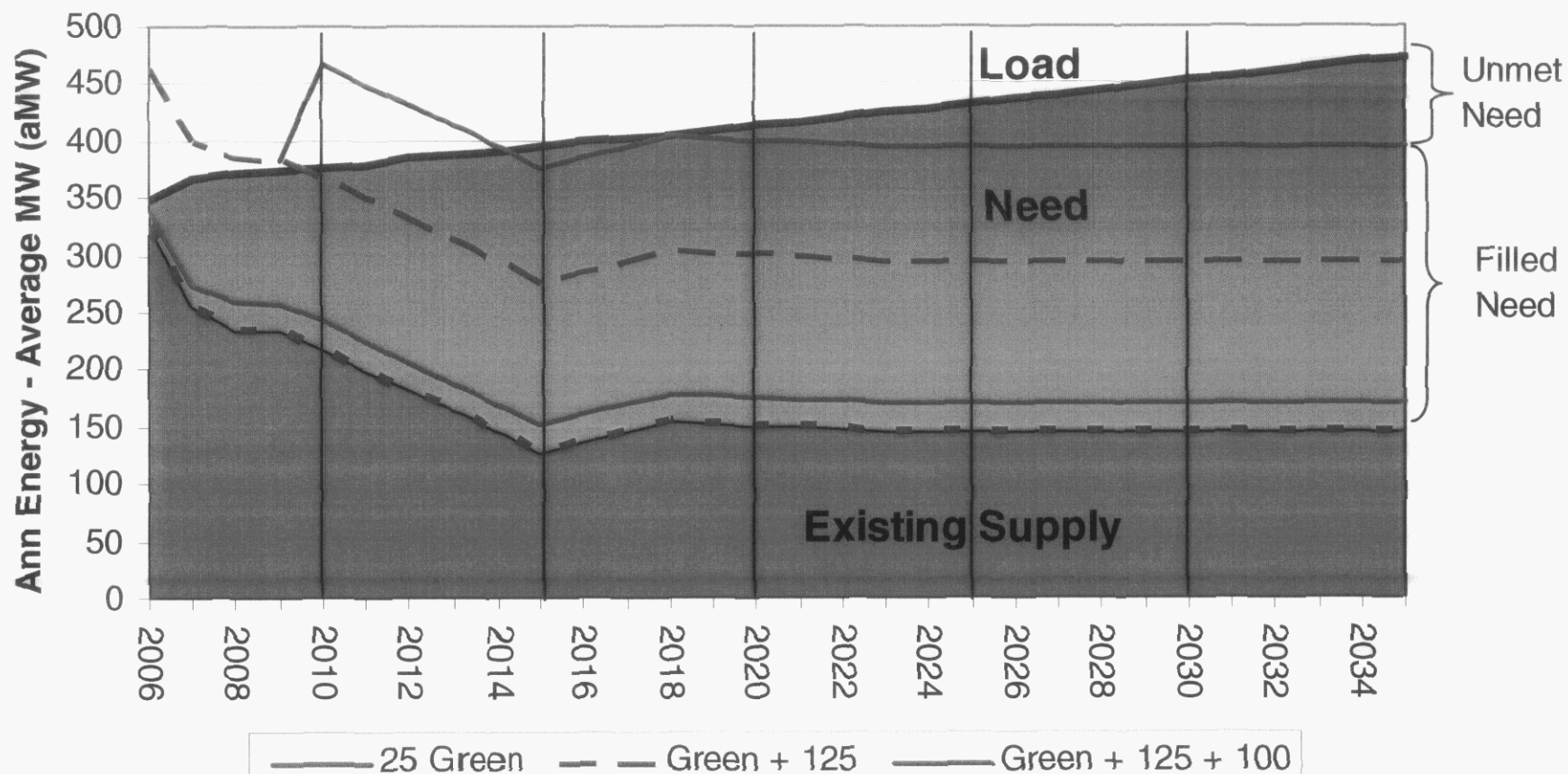
- *Goal "Keep Member Rates Low"*
- *Based on Strategic 10-20 year Planning*
- *Assets versus the Market*
- *NCPA is 90% Renewable Resource*

■ *Working together we can be more efficient*

- *More Efficient Use of Fuel*
- *Environmentally Friendly*
- *Lower Costs*

Energy Shortfall for next 25 years -

**NCPA 10 Member Pool and BART - Energy Balance
 (Without Roseville)**



Why Work Together? - Lower Costs!

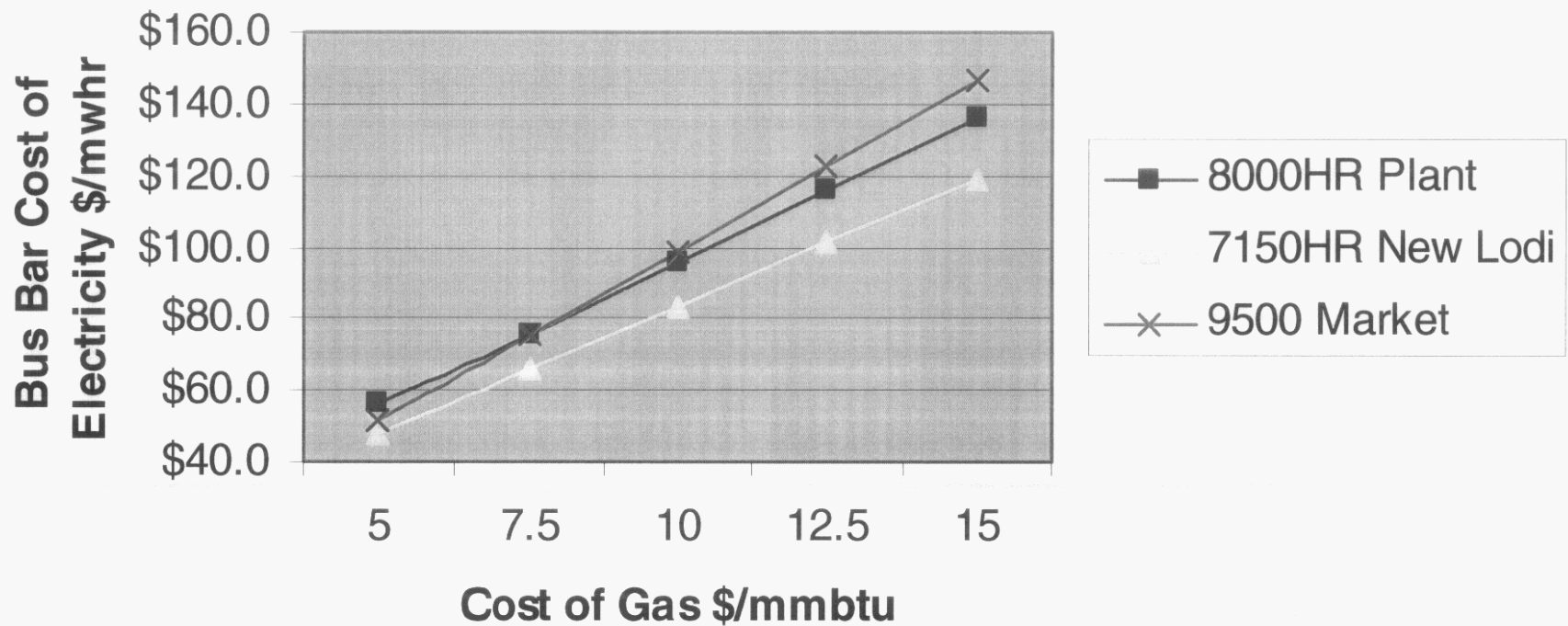
☐ *Should I build a smaller plant "behind the meter" or should I participate in a larger plant?*

☐ **\$10/mwhr Savings!!!!**

	Small	Big
Behind the Meter Savings \$/mwhr	\$5.00	
LMP (Reference CAISO MRTU Study). The costs in a few hours a year may be high but the average costs appear to be less than \$1.50/mwhr	\$1.50	
Savings in Cost of Gas @ \$10/mmbtu		\$8.50
Savings on Lower \$/kw Capital Cost		\$3.30
Savings on Higher Capacity Factor – (30% difference)		\$2.80
Savings on Lower O&M/mw		\$2.20
TOTAL	\$6.50	\$16.80

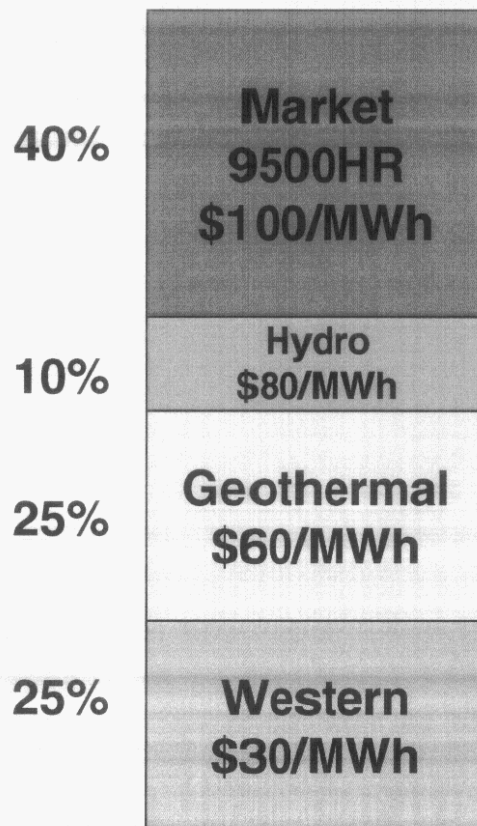
How much can I save by partnering in a large plant ?

Bus Bar Cost of Electricity \$/mwhr



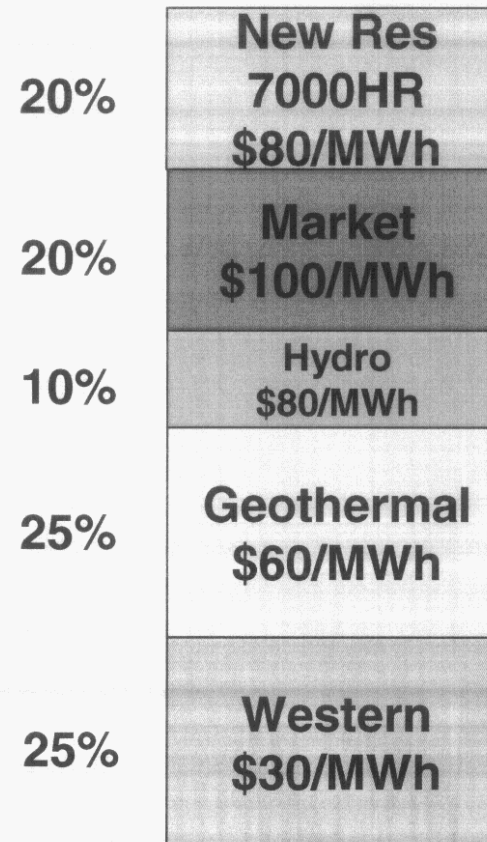
Reducing Customer Costs - Efficiency of Size!

Existing Portfolio



\$70.50 / MWh Melded Cost

Add New Resource Portfolio



\$66.50 / MWh Melded Cost

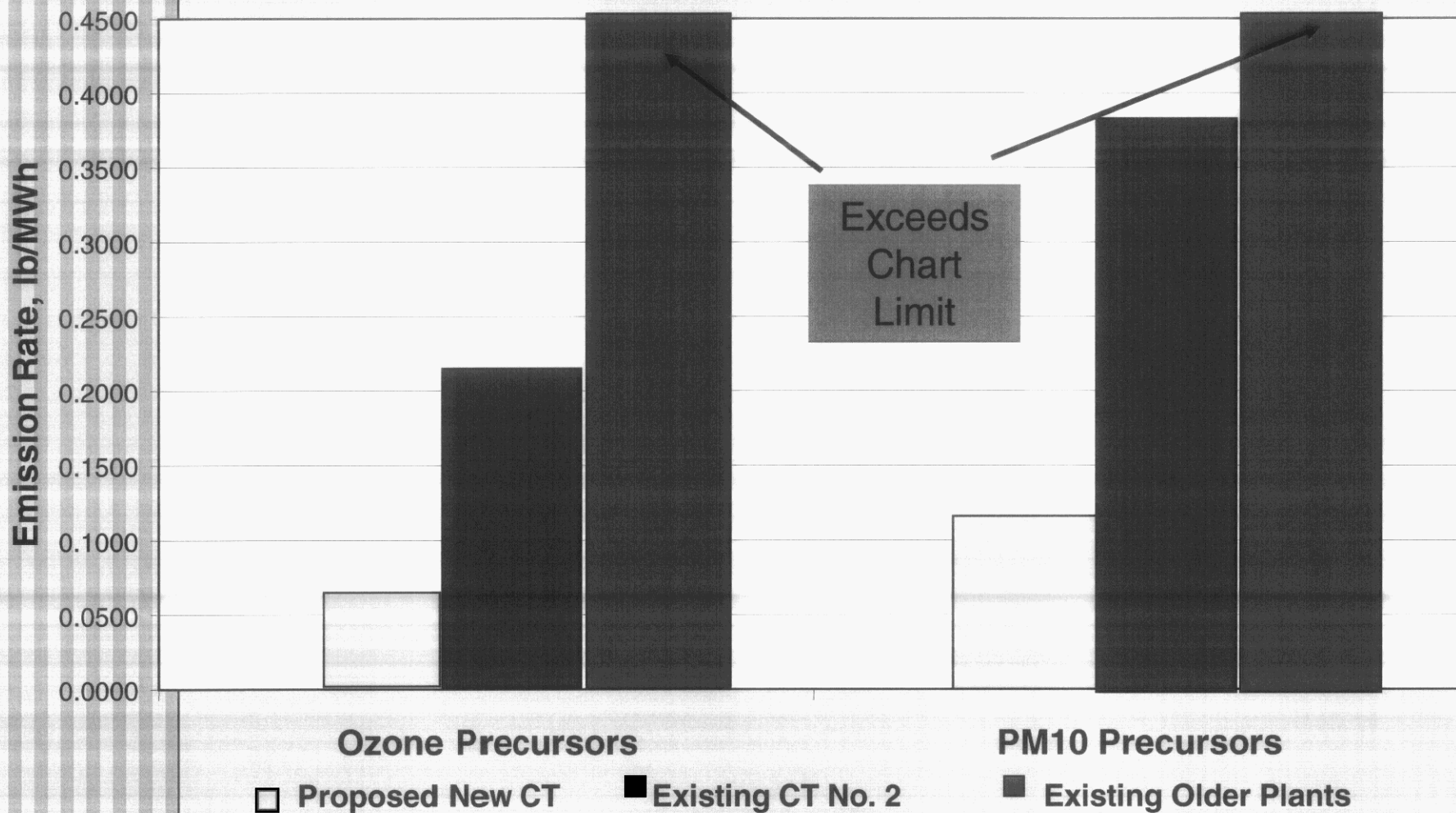
Define the Opportunity - New Lodi

□ *Lodi Site -*

- *1x1 Frame 7FA versus other configurations*
 - *255mw @ 7008 Heat Rate (267mw @ 7092 btu/kw)*
 - *Versus 9500 Heat Rate of Existing STIG*
 - *26% LESS FUEL to get a Megawatt of Energy!!!!*
- *On Line Date - Feb 2009*
- *Total Cost of \$212 million (\$800/kw)*
 - *Includes 5% Contingency*
 - *Includes all Development Costs*
 - *Opportunities to Reduce Cost by \$20 million*

Comparison of Emission Rates

(Measured in pounds per megawatt-hour)

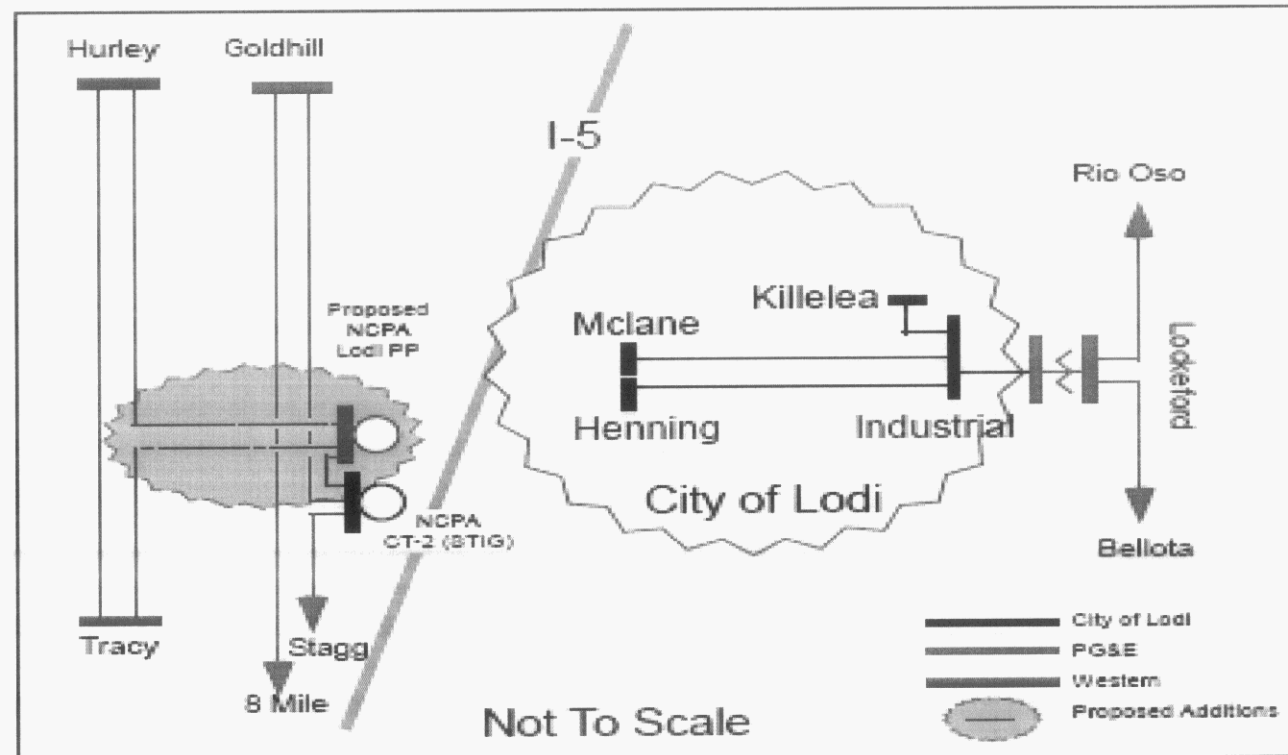


Gas Line Route - Follows existing STIG Gas line



Transmission & Interconnection - Western & PG&E

Loop in the existing Western Hurley - Tracy #1 230 kv line near the existing NCPA STIG CT.



Present Status - New Lodi Opportunity

☐ *Current Status -*

- *No Fatal Flaws - Analysis Completed*
 - ☐ *Transmission*
 - ☐ *Gas*
 - ☐ *Air*
 - ☐ *Water - Need a "Will Serve"*
 - ☐ *Environmental*
- *Ready to Move Forward - Application to CEC*
- *Phase II Agreement with NCPA Members*
- *Define Participation %*

Proposed Phases - New Lodi

☐ *Proposed Phases -*

- *Phase I - \$200,000 Completed*
- *Phase IIA - \$2.6m, Jan-July '06*
 - *Submit Application to CEC*
 - *Achieve Data Adequacy at CEC*
 - *15% Payment to Secure Option on ERC's*
- *Phase IIB - \$13 million, Agreement in July '06*
 - *Complete CEC Permit Process, 1 year*
 - *Exercise ERC Options - \$4.5 million (June 2007)*
 - *Detailed Engineering - \$6.5 million (Start Nov 06)*
 - *Release for Construction - 2nd Quarter 2007*

Needed from the City -

☐ *Support from the City of Lodi -*

- *“Will Serve” for Water -*
 - *Supply - 1.7 mgd normal, 2.5 mgd max*
 - *Discharge - 0.58 mgd normal, 0.76 mgd max*
- *Stack Height - 130ft*
- *Easements or Additional Land Lease*
- *Temporary Laydown area - 10 acres*

Community Benefits

Estimated Community Benefits

- *Jobs ~ 350 Construction Jobs* ****
- *Jobs ~ 9 Family Wage Full Time* ****
- *Energy for the Community at Cost versus Market* ****
- *Annual Revenue from Shared Facilities (39.5% of)* \$ 250,000
- *Annual Savings on Labor (39.5% of)* \$ 1.67 m
- *Annual Revenue from Other (100% of)* \$ 196,000
- *Potential "Behind the Meter Energy Savings"* ****



Questions? -